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ABSTRACT

Evidence presented in this paper substantiates the position that: (1) the United States is pursuing a national goal and foreign policy of population control; and (2) a conflict about this goal could arise within the minds of many people. To support these two facts, the author has outlined statements giving an overview about the profusion of population control literature and the moral problems of control methods, particularly abortion. A mathematically-oriented point of view regarding demographic aspects considers man's future prospects in the world, the ultimate capacity of the earth, and the lack of controversy over population control. The history and recent legislation of the population control movement are also outlined, as well as comments by Robert S. McNamara on population control and its myths. Citations and a bibliography are included. (BL)

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POPULATION CONTROL, MYTH OR FACT

AS A NATIONAL GOAL

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COLLEGE OF EDUCATION - ARIZONA STATE UNIVERSITY

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A. Overview - a dissemination and moral problem.

1. Literature explosion:[1]
   a. Is as threatening as the growth rates in the developed and developing countries.
   b. The immense amount of population control literature will produce disastrous consequences for individuals attempting to stay on top of the field if not handled carefully.
   c. Steps taken to manage the digestibility of population control literature are as follows:
      (1) Workshops (in 1968, 1969, and 1970):
         (a) 25 U.S. libraries have attempted to develop a network for communication and exchange of literature among citizens and "population interested libraries".
            1. These workshops, sponsored through a grant to the Carolina Population Center Library in Chapel Hill, will be held annually.
            2. First steps have been taken to develop an automated system for these libraries.
      (2) Establishing of arbitrary categories of which the following is an example:
         (a) Historical aspect:
            1. Norman Himes' Medical History of Contraception (1936) was the first definitive effort to cover birth control in pre-literate times, both Western and Eastern antiquity.
            2. D.V. Glass and D.E.C. Eversley's "Population in History: Essays in Historical Demography," an essay in the U.S. library journal, Choice (Feb. 1966), gave a summary view of the principle of population in 1830 by Thomas Malthus, an English clergyman.
            3. Summaries of the writings and activities of the American woman, Margaret Sanger, and her battle for the birth control movement in the late 19th - and early 20th century-have appeared and reappeared in periodicals (see Choice, Jan. 1971).
            4. In short, the history of population control literature is sketchy because the population explosion is virtually a contemporary phenomenon (i.e., it is a phenomenon resulting largely from the post-World War II fall in death rates without a corresponding fall in the birth rate in the less industrialized and developing nations; in addition, the field is so new that articles, reports on conferences, edited collections and current periodicals remain the primary sources of information).
         (b) Emergence of Conferences:
            1. One predictable response to widespread recognition of a new problem is a conference. The first international conference on population control was held in Rome, August 31 through September 10, 1954, resulting in the U.N. publication, Proceedings of the World Population Conference, 1954.
            2. After a lull, several conferences were held in the years 1962-65. Interestingly, they were sponsored by the Institute of Life Insurance and the Graduate School of Business, Columbia University. Papers of these conferences focused upon demographic trends, income distribution, urbanization, impact of technology, cultural and social changes (all of which are still critical and unsolved aspects of the population problem). In addition, the American Academy of Arts and Sciences held a conference focusing broadly on human fertility.

3. 1965 produced two conferences resulting in standard reference volumes: the U.N. volume entitled, World Population Conference, Belgrade, 1965, and the accumulated papers of a Geneva conference, sponsored by The Population Council and Ford Foundation, resulting in the publication by Bernard Berelson and others, entitled, International Conference on Family Planning Programs, Geneva, 1965, 1966.
4. In April 1967, the International Planned Parenthood Federation sponsored a conference in Santiago, Chile, which covered the whole range of family planning. Also, in November 1967, a conference on world fertility and family planning was held at the University of Michigan.
5. In 1969, Bernard Berelson published a sequel to the 1966 volume, entitled Family Planning and Population Programs, containing updated reports on population efforts in Japan, Taiwan, Malaysia, Singapore, India, Pakistan, Turkey, Tunisia, Puerto Rico, Jamaica, Chile, and the U.S.A.

(c) Research:

1. The earliest major population research was conducted in the late 1930's, concentrating on testing 23 hypotheses about the social and psychological factors which affect fertility (all 23 hypotheses were rejected).
2. A Khanna study, 1954-1960, focused upon rural India regarding a contraceptive program. It was summarized in the publication, Conference on Research in Family Planning, New York, 1960, 1962, edited by Clyde V. Kiser. It includes studies and research methods used not only in India but in the Middle East, U.S.A., Europe, and Latin America.
3. Two nationwide studies in the U.S.A. during 1955 and 1960 have become standard information sources on American population trends and family planning attitudes. They are known as the "Growth of American Families (or GAF) Studies" and are reported in Family Planning, Sterility, and Population, 1959, by R. Friedman and others, and in Fertility and Family Planning in the United States, 1966, by P.K. Whelpton and others.
4. A species of population research evolved during the 1950's and 1960's which has come to be known as KAP surveys (i.e., studies of knowledge attitudes and practices of family planning). These surveys have been conducted in numerous countries with little effort to standardize instruments.
5. The Population Council has published selected questionnaire forms in two volumes entitled Selected Questionnaires on Knowledge, Attitudes, and Practices of Family Planning, 1967.
6. Human Fertility in Latin America by J.M. Stycos is the most recent broadly based analysis of fertility problems in Latin America.
7. AFTER 1968 IT IS MUCH LESS POSSIBLE TO CHRONICLE POPULATION RESEARCH EFFORTS BECAUSE OF INCREASED FUNDING FOR RESEARCH FROM MULTIPLE SOURCES, ESPECIALLY THE FEDERAL GOVERNMENT AND BECAUSE OF THE PLETHORA OF RESEARCH PROJECTS. The U.S. Agency for International Development, along with the U.S. Department of Health, Education, and Welfare, and the Ford and Rockefeller Foundations, are sponsoring extensive research efforts.

The Population Crisis Committee of 1730 K Street, N.W., Washington, D.C. 20006 (telephone No. 659-1833) publish a newsletter entitled the Population Crisis and the Population Reference

Bureau, Inc., of 1775 Massachussetts Ave., N.W., Washington, D.C. 20036 publish the periodical, Population Bulletin. Both are brave attempts to keep readers current on recent research and federal and state legislation. In addition, the Planned Parenthood - World Population of 515 Madison Ave., New York, N.Y. 10022 publishes the excellent newsletter, Planned Parenthood News, which parallels the focus of the above two periodicals.

The Population Council, funded largely through the Ford and Rockefeller Foundations since 1952, is also a reappearing name in population control research.

8. The most recent, publicized research report, entitled Need for Subsidized Family Planning Services: United States, Each State and Country, 1968 (Office of Economic Opportunity), is an estimate of unmet need among 5.3 million low income Americans for subsidized family planning and is being used by President Nixon to direct the Department of Health, Education, and Welfare and the U.S. Office of Economic Opportunity to serve 86 percent of these Americans.

(d) Alarm literature:

1. Dire predictions depicting massive world starvation have appeared regularly in newspapers and magazines in the past few years. Assuming these predictions are true, a state of alarm and anxiety cannot be sustained continuously.
2. Three authors illustrate the tone of this literature: Paul and William Paddock's book, Famine, 1975! America's Decision Who Will Survive? and Paul R. Ehrlich's books, Population Control or Race to Oblivion, The Population Bomb, and How to be a Survivor (co-author, Richard L. Harriman).

(e) Theological debate:

1. The religious debate over birth and population control has produced many words, a great deal of heat, but not much light.
2. Little literature exists on Hinduism, Buddhism, Shinto, or Confucianism because none of these religions oppose birth or population control. Of the non-Christian religions, Islam is the most likely to be opposed. This potential opposition generated the publication, Moslem Attitudes Toward Family Planning (Population Council, 1967).
3. On the whole, Protestant attitudes, while initially negative, have progressed almost as rapidly toward acceptance as attitudes of the general public.
4. Among the major religions, only Eastern Christian Orthodoxy and Catholicism are still actively opposed to fertility control (outside of "rhythm" for Catholics) in a doctrinaire way. At this time, official Catholic statements are under heavy fire from without and within; however, the "Humanae vitae" is one of the few Catholic documents favoring the official position of the Church.

(f) Abortion

1. Although not commonly recognized, abortion is the most widely used

method of birth control in the world.

2. Abortion literature is important because many feel that growth rates in developing countries won't be controled without massive abortion-on-request.
3. As the reader is aware, a number of states have already liberalized their abortion statutes, or eliminated them all together. One of the first to do so was North Carolina.

(g) Textbooks

1. There are no textbooks on population control or population planning per se; however, there are excellent textbooks in demography. One of the best is William Peterson's Population (2nd ed., 1969) in which he covers the usual elements of population analysis such as age and sex structure, fertility, mortality, migration, plus factors in population developments from primitive societies to the present.
2. Two of the most commonly used edited collections of writings are L.B. Young's Population in Perspective and C.B. Nam's Population and Society: A Textbook of Readings. In addition, G. Hardin's Population Evolution and Birth Control: a Collage of Controversial Ideas is certainly only a collage of controversial readings. A second updated edition accompanied by a "teaching notes" booklet was published in 1969.
3. One textbook and one programmed instruction course have appeared in the field of contraceptive practice. The layman will thus find the Textbook of Contraceptive Practice by J. Peel and M. Potts, a useful resource. Anyone wanting a sophisticated,though brief, introduction to methods of conception control will find Methods of Concention Control: A Programmed Instruction Course by D.P. Swartz and R.L. Vande Wiel very instructive.

(h) Periodicals - a Necessity

1. The absence of texts is further evidence that the field of population control is young.
2. In addition to the previously mentioned periodicals under item (c) 7., the Population Council publishes 60 issues of Studies in Family Planning and 10 issues of Population Council annually. Both publications are available without charge from the Publications Office, The Population Council, 245 Park Ave., New York, N.Y. 10017. Also, an excellent FREE new quarterly journal generally offering non-technical articles for persons active in the population field is Family Planning Perspectives, published by the Center for Family Planning Program Development, Planned Parenthood - World Population, 515 Madison Ave., New York, N.Y. 10022.

   The Population Association of America of Box 14182, Benjamin Franklin Station, Washington, D.C. 20044 publishes Demography on a quarterly basis; it's a publication that is somewhat mathematically oriented. A similar journal with a broad population focus is the Milbank Memorial Fund Quarterly, published by the Milbank Memorial Fund, 40 Wall St. New York, N.Y. 10005.

   The U.S. Government and the United Nations both issue publications which are essential to the field. Monthly Vital Statistics Reports which interprets births, deaths, marriages, and divorce statistics and trends and which is FREE on request is published by the U.S. Department of Health, Education, and Welfare, Public Health Service, Rockville, Maryland.

   Because the U.S. Agency for Internal Development (AID) has one of the largest population assistance programs in the world, its annual reports are important summaries of what is happening in the field. Its address is A.I.D., Bureau of Technical Assistance, Population

Service, Washington, D.C. Also, annual reports from the major foundations supporting population work are valuable sources of information about the field. Lastly, the U.N. issues its Demographic Yearbook. This is obtainable through the U.N. Statistical Office, Department of Economic and Social Affairs Annual. It is an invaluable tool for any student doing studies or research in the population field.

(i) The Task Ahead:

1. Two publications of the Carolina Population Center, University of North Carolina, Chapel Hill, North Carolina, have charted the needs for the future in the field of population control. The first is Approaches to the Human Fertility Program, edited by M.W. Freymann. The second is Cracking the World Population Problem: A U.S. Goal for the 70's, also edited by M.W. Freymann. The former was prepared at the request of the U.N. Advisory Committee on the Application of Science and Technology to Development. The latter was prepared at the request of the President's Task Force on International Development.

2. Moral Problem:

a. As was previously stated, the Roman Catholic Church permits only the "rhythm" method to control population; contraceptives are denounced as "unnatural."[2] Humanae vitae, the July 29, 1968, encyclical of Pope Paul VI, reaffirms the Church's position on contraceptives and abortion:[3]

> In the task of transmitting life, --- parents are not free to proceed completely at will, as if they could determine in a wholly autonomous way the honest path to follow --- Abortion, even if for therapeutic reasons is absolutely excluded --- (as is also) sterilization, whether perpetual or temporary, whether of the man or of the woman.

b. To return to the Catholic Church's position on abortion, it believes that every human being, including the embryo immediately after the union of the male sperm and the female ovum, has received its right to life immediately from God, not from the parents or any human society or authority, and that, therefore, any interference with this life is a crime against the law of God and nature.[4]

c. Most countries now recognize therapeutic abortion. Unlike the Catholic Church, they justify the destruction of the growing life in the womb for the sake of the preservation of the life of the mother.[5]

(1) The legitimacy of therapeutic abortion is now recognized by legislation in most of the United States. The position is universally taken to be the same in England, at least since the decision in the Bourne's case, where a famous gynecologist performed an abortion upon a girl of fourteen who had been raped by a number of soldiers and had become pregnant.[6]

(2) Given the growing range of modern psychiatry, the possible effect of an unwanted pregnancy, on grounds of mental health, can be extended far. --- A judicial recognition of an extension to the threat to mental health is far less certain (a reason for an abortion). --- As long as the legitimation

of abortion is as strictly and narrowly defined as it is in the contemporary common-law jurisdictions --- qualified medical practitioners will abstain from performing abortions which they consider necessary and desirable, thus leaving the field to the thousands of unqualified practitioners.[7]

(3) Interestingly, two of the world's most populous countries have adopted --- abortion virtually without limitation: the Soviet Union and Japan.[8]

(4) The present law of abortion, as it prevails in the common-law countries (and many other States), has not proved to be an effective instrument of social control. It remains as it is largely because of the adamant position of an influential religious and political minority, which in turn makes it politically inexpedient for many who hold different convictions to press their own point of view.[9]

B. Robert S. McNamara's comments on population control and its myths:[10]

1. In 1969, McNamara, President of the World Bank, was compelled (in his own words) to speak about the population control issue at Notre Dame University.

2. His initial ideas are as follows:

a. Two-thirds of mankind (i.e., two billion individuals) suffer from hunger, malnutrition, illiteracy, inadequate education, and corrosive poverty.

b. The gap between the rich and poor nations is a chasm; the rich nations enjoy a per capita income of $3000 while the poor nations of Asia and Africa struggle along on per capita incomes of less than $100.

c. The above problem gap is compounded by a population growth unprecedented in history, making population control an inseparable part of national development and the GREATEST SINGLE OBSTACLE TO THE ECONOMIC AND SOCIAL ADVANCEMENT OF THE MAJORITY OF PEOPLES IN UNDERDEVELOPED COUNTRIES.

d. Demographically speaking, population increase is simply the excess of births over deaths. For most of man's history the two have been in equilibrium. ONLY IN THE LAST CENTURY HAVE THEY BECOME UNBALANCED. It took sixteen hundred years to double the world population of 250 million, as it stood in the first century A.D. Today, the present three billion people will double in 35 years. TO PROJECT THE TOTALS BEYOND THE YEAR 2000 IS STATISTICALLY INCOMPREHENSIBLE because events won't permit them to come to pass. What is not so certain is precisely what these events will be; HOWEVER, THEY WILL BE ONE OF THREE THINGS: MASS STARVATION, POLITICAL CHAOS, OR POPULATION PLANNING.

e. If we reject mass starvation and political chaos as solutions to the population explosion, there are only three conceivable ways in which a nation can deliberately plan to diminish its rate of population growth: to increase the death rate; to step up the migration rate; or to reduce the birth rate. No one is in favor of the first choice; and the second choice is inadequate (i.e., increased migration is not practical). This leaves the third choice: a humane and rational reduction of the birth rate.

f. Let us examine for a moment the consequences of our continued rate of world

population growth:

(1) There is less food per person on the planet today than there was 30 years ago.

(2) Thousands of human beings will die today because of hunger. They will either simply starve to death or they will die because their diet is so inadequate that it cannot protect them from some easily preventable disease.

(3) The human brain reaches 90% of its normal development in the first four years of life. Since the brain is highly vulnerable to nutritional deficiencies, these deficiencies can cause as much as 25% impairment of normal mental ability. REMEMBER, THIS IS IRREVERSIBLE BRAIN DAMAGE WHICH IS PERPETUATED BECAUSE PARENTS ARE ILL-EQUIPPED TO AVOID FUTURE NUTRITIONAL DEPRIVATIONS.

(4) Thus, it is imperative to understand why the current birth rates are seriously crippling developing nations. The reason is that these governments must divert an inordinate proportion of their limited national savings away from productive investment to maintain the current low level of existence.

(5) As a consequence of above, the quantity and quality of education will decline resulting in shanty towns where 50 to 60% of the adolescents are out of work (i.e., the total number of meaningful jobs tends to decline in proportion to the population because the government has been unable to invest adequately in job producing enterprises).

(6) The personal family life of poor and developing nations reflect their governments' food and population problem as follows:

(a) Poor families, who cannot find legal assistance to curb family expansion, turn to illegal means; in short, millions of families want to avoid unwanted pregnancies.

(b) In five countries of Western Europe, there is estimated that there are as many illegal abortions as live births.

(c) In India, it is estimated that a quarter of a million women undergo illegal abortion every month.

(d) In one Latin American country, it is estimated that there are three illegal abortions to one live birth.

(e) In short, illegal abortion is endemic in those world areas where there is not adequate, organized family planning assistance.

3. McNamara concluded his Notre Dame Address with the examination of the following population control myths:

a. MORE PEOPLE MEANS MORE WEALTH - This is a fallacy; rapid population growth retards growth in per capita income. Sound economic growth requires high levels of training which strained government resources can't supply. "Cheap labor" does not turn out to be cheap at all.

b. COUNTRIES WITH LARGE TRACTS OF UNINHABITED LAND HAVE NO NEED TO WORRY ABOUT BIRTH RATES - This is a fallacy; open, uninhabited land does not, in itself, support a high rate of population growth. If such land is to become inhabited, there must be heavy government investment regarding roads, housing, sanitation, agriculture, and industry. In short, raw space needs surplus funds for investment, not surplus people. IT IS SURPLUS PEOPLE IN DEVELOPING COUNTRIES WHICH INHIBIT THE ACCUMULATION OF SURPLUS FUNDS.

c. RATIONAL RESTRAINT ON FERTILITY RATES IN A DEVELOPING COUNTRY IMPLIES AN ABSOLUTE REDUCTION IN POPULATION - This is a fallacy. Also there are no reasons for fearing that a nation's population under properly utilized family planning will ebb away. The opposite is true: inadequate family planning will allow population growth to increase to self-defeating levels.

d. FAMILY PLANNING IN A DEVELOPING COUNTRY IS UNNECESSARY SINCE ECONOMIC DEVELOPMENT LEADS TO LOWER BIRTH RATES - This is a fallacy even though Europe is cited as persuasive proof of this theory. Interestingly, this is no proof at all because there are no comparable circumstances between what happened in Europe's early period of modernization and what is happening in the developing countries today (since conditions in Europe during its initial economic developmental period were more favorable to lower rates of population growth). BIRTH RATES WERE MUCH LOWER THAN THEY ARE IN THE UNDERDEVELOPED COUNTRIES TODAY AND THE DEATH RATES HAD NOT DRASTICALLY FALLEN.

e. FAMILY-PLANNING PROGRAMS ARE SINISTER, COERCIVE PLOTS TO FORCE POOR PEOPLE INTO SOMETHING THEY REALLY DO NOT WANT - This is absurd because of the prevalence of voluntary illegal abortion.

f. FAMILY-PLANNING INEVITABLY LEADS TO A BREAKDOWN OF FAMILY MORAL FIBER - A walk through the slums of any major city in the developing countries is enough to dispel that concept. If anything is threatening the family moral fiber, it is the degrading conditions of subsistence level that one finds in the world's "shanty towns." In short, family planning is not designed to destroy families; it's designed to save them. It would be an intollerable invasion of the family's rights for the State to use coercive measures to implement population policy. Countries can preserve that right by assisting families to understand how they can best make that decision for themselves.

g. TIME FOR DECISIVE ACTION IS PAST AND SWEEPING FAMINE IS INEVITABLE - This is also a fallacy. There is time to reverse the situation, if we use that time. This time has been given to us by those who have created the revolution in agricultural technology (i.e., new seeds, hybrid strains, fertilizers, and intensive use of natural resources). If we speed the spread of this agricultural revolution, the world's food supply will grow at a faster rate than its population.

C. Demographic Aspects, a Mathematically Oriented Point of View.[11]

1. Man's future prospects in the world:

a. If a population is introduced into an environment where it is not already found, population growth occurs initially at a rate dependent only on the size of the population present at any instant in time. Where N represents the population size, t is time, b is the instantaneous birth rate, d is the instantaneous death rate, and r, (the intrinsic rate of natural increase) is defined as B-d, we have

$$\frac{dN}{dt} = (b-d)\,N \qquad \text{or} \qquad \frac{dN}{dt} = rN \qquad (2.1)$$

b. After a population has been in a new environment for a long period of time and the density of the population has increased to a high level, competition for food and other resources becomes severe and is reflected in dropping of birth rates. It is then said that the population is being limited by environmental resistance.

For any given population of animals or plants, and any given environment, there is a maximum number of members of the population which the environment is able to support. Let us call this maximum number K. As the population grows more and more dense, the growth rate becomes smaller and smaller as N approaches K. Beginning with the first small group of emigrants, and following the population to the time at which N equals K, the form of population growth can be described by the following differential equation:

$$\frac{dN}{dt} = rN\,(K-N) \qquad (2.2)$$

A population growing in accord with (2.2) will have its maximum rate of growth when $d^2N/dt^2=0$, or when $N=K/2$. However, when a population is beginning to expand in a new environment, N is very small as compared to K. Changes in the term K-N then occur so slowly that we can treat (2.2) as:

$$\frac{dN}{dt} = rKN \qquad (2.3)$$

We can determine how important the term K-N has become for any population as follows: equation (2.3) integrates to yield

$$N_1 = N_o e^{rKt} \qquad (2.4)$$

We can determine if (2.4) describes the growth of a particular population by plotting N_1, the number at a particular time for that population, against t, on semilog graph paper.

If K-N has become important for the population in question, the plotted points will not fall on a straight line, but will bend more and more downward from the left to the right of the graph. The reader may determine for himself if (2.4) describes human growth by using the data from the tables in the Demographic Yearbooks published by the United Nations Statistical Office.

THE READER WILL THEN MAKE THE SURPRISING DISCOVERY THAT HIS PLOTTED VALUES OF N_1 AGAINST YEAR WILL SHOW THAT THE WORLD TOTAL HUMAN POPULATION IS GROWING ACCORDING TO SOME LAW DIFFERENT FROM THE LOGISTIC (2.2) AND THE EXPONENTIAL (2.1). In short, human population is growing in accord with a law different from that for any other plant or animal population ever observed.

2. The ultimate capacity of the earth:

a. How can we determine exactly how large the human population can become and exactly how great the pressure on natural resources will be? The answer can be obtained by making use of the following pieces of information, all essentially fixed values, and all readily determined using methods acceptable to experts:

(1) the amount of solar energy that falls on a unit area of land per annum.
(2) the number of units of land on the earth's surface suitable for growing crops, and the number of units of water in all the oceans, lakes, rivers, and streams.
(3) the percentage of the radiant energy from the sun that appears as chemical energy in each possible type of crop.
(4) the number of units of energy required to fuel an average human being for one year.

If we know (1) and (3), we can compute the amount of energy captured on a unit of the earth's surface per annum for each type of crop. This result can be combined with (2) to calculate for each crop the total amount of energy that could possibly be captured on the earth's surface per annum. Then from (4), we can use division to obtain the total human population that can be supported by each crop, or by various combinations of crops.

b. Our "7" sets of information are as follows (and should be regarded as rough estimates):

(1) the flux density of the sun is different at different points on the earth's surface; an approximate average of 1.6×10^{10} kilocalories per hectare per year will be assumed.
(2) the total available arable land in the world is approximately 4.56×10^9 hectares, which includes all present land under cultivation and all additional cultivable land.
(3) Conversion efficiencies of the various crops appear in the following Table A (Kleiber, 1961):

TABLE A

The capacity of the earth to support human beings*(Kleiber, 1961)

Crop	Percentage of the radiant energy from the sun appearing as chemical energy in crop	Approximate area required to grow enough food to feed one man 10^6 keal/ year in sq. m.	World population of human beings that could be supported by terrestrial resources alone
Algae	50	1	4.6×10^{13}
Potatoes	0.10	600	7.6×10^{10}
Grain	0.05	1.200	3.8×10^{10}
Prunes	0.04	1.500	3.0×10^{10}
Milk	0.04	1.500	3.0×10^{10}
Pork	0.015	4.000	1.1×10^{10}
Eggs	0.002	30.000	1.5×10^{9}

* Current population is 3.0×10^9.

(4) Human beings of about 154 pounds (i.e., 70 kilograms) have a basal metabolism of 1700 kilocalories per diem. The Asian intake per day in 1958 was 2070 kilocalories per diem. An international average allowance per diem per human being is approximately 3000 kilocalories (or roughly 10^6 kilocalories per annum).

(5) From inspection of Table A, it is clear that a principle factor determining the world population is the number of steps involved in converting incident solar radiation into food. Thus algae use the sun directly, and efficiency is high. Pigs, which eat plant life, are an extra step removed from incident radiation, and therefore use the land surface much less efficiently. In short, the question of energy-conversion efficiencies in trophic communities must be understood to determine how much population the world can hold.

(6) The following Table B shows that on an international level, mankind's per capita intake of food peaked in 1959 to 1960, and has not risen since, despite the fact that much of the world's population is suffering from chronic malnutrition.

TABLE B

The race with fate:
World per capita food production index numbers*

Time	Index number	Time	Index number
Prewar average	95	1959 - 1960	107
Average 1948-1953	95	1960 - 1961	107
1953 - 1954	100	1961 - 1962	106
1954 - 1955	99	1962 - 1963	107
1955 - 1956	100	1963 - 1964	108
1956 - 1957	103	1964 - 1965	109
1957 - 1958	102	1965 - 1966	107
1958 - 1959	106	1966 - 1967	106 (est.)

(7) In conclusion, let us suppose the marine catch for the world could be made 20 times as great as the present. Then marine resources alone could support 9×10^8 people, or about one-third of the present world population. THIS RATHER DISHEARTENING PICTURE WOULD ONLY CHANGE GREATLY IF WE SWITCH TO EXTENSIVE HARVESTING OF SEA PLANTS INSTEAD OF SEA ANIMALS. The difficulty with this possibility is that much of the world's sea plant life has a low-density population of algae, making the expended energy (not money) not worth its while.

3. Population control is no controversy:
   a. Professional demographers almost unanimously favor controlling fertility by whatever techniques science can offer. This unanimity has reached the point where, when a television network wants to stage a pro-con discussion of birth control, it is easy to find debaters for the affirmative but extremely difficult to locate qualified experts to take the negative.[12]

D. Brief History and Recent Legislation of the Population Control Movement.
1. History:
   a. Before the appearance in 1826 of Essay on Population by Thomas R. Malthus, an Englishman, demographic theory was non-existent. His major contributions were:
      (1) human growth increases at a geometric rate (i.e., for example, 1, 2, 4, 8, 16, 32, 64, 128, 256) while food increases at an arithmetic rate (i.e., for example, 1, 2, 3, 4, 5, 6, 7, 8, 9).[13]
      (2) population is limited by the means of subsistence.[14]
      (3) population increases when the means of subsistence increases unless prevented by powerful checks (as war, disease).[15]
   b. Margaret Sanger, an American woman, founded the American Birth Control League in 1921; in 1946, it became the Planned Parenthood Federation of America.[16]
   c. The Malthusian doctrine seems to have more strengths than weaknesses, for twentieth - century scholars and politicians alike have revived Malthus to the extent that all post-Malthusian theories are classified as neo-, pro-, anti-, semi-, or quasi- Malthusian. Thirty years before President Johnson's 1964 declaration of "war on poverty," a group of Englishmen formed a Malthusian League having the motto "war on poverty."[17]
   d. The deliberate effort to inform young minds about population through education is strikingly recent, given the fact that the population movement itself is several decades old. Since 1929 the Population Reference Bureau has undertaken to educate the public both as to the facts and implications of continued population growth:[18]
      (1) Writing in The Teachers College Record in 1962, the demographer, Phillip M. Hauser, expressed that population matters have had relatively little impact on the school curriculum.
      (2) There was one experimental program of population education on record as thriving at the time of Hauser's indictment; it was implemented in a demonstration high school attached to Ohio State University and taught by Irwin Slesnik through the 1962-1963 academic year.
      (3) By 1965, Hauser's message was getting through; other teachers here and abroad began to see signs of life on the population issue.
      (4) Baltimore pioneered the teaching of population concepts through the efforts of Mrs. Alexander S. Cochran and her associates at Planned Parenthood, Inc. of Maryland. Mrs. Cochran persuaded the Population Reference Bureau to produce the first in its current series of three ancillary texts on population for elementary and secondary schools. However, Baltimore was a great exception; the few interested teachers worked alone against a wall of community and professional indifference.
      (5) Today, the population education enterprise in the United States is

haphazard. Major financial backing is absent but probably on the way from foundations and the government.

e. In November of 1952, the Population Council (funded largely by the Ford and Rockefeller Foundations) was established to stimulate, encourage, promote, conduct, and support activities in the broad field of population.[19]

f. In April of 1963, the National Academy of Sciences made the following report:[20]
   (1) support of graduate and postdoctoral training in demography should be increased.
   (2) research on human reproduction should be expanded..
   (3) international cooperation in studies concerned with voluntary fertility regulation and family planning is highly desirable.
   (4) programs in the United States for the training of family-planning administrators should be improved and enlarged.
   (5) a committee should be established by the National Academy of Sciences for the purpose of stimulating and coordinating programs directed toward the solution of problems of uncontrolled growth of population.

g. For a number of years there was increasing recognition and concern for the world population problem by the United Nations. A principal barrier to population stabilization had been the sensitivity that surrounded the subject, a fact that inhibited most world leaders from taking meaningful action. This situation was the genesis of the statement on population and the effort to enlist leaders around the world to endorse it. With the active support of Secretary - General U. Thant, the first list of twelve signatories was announced at the United Nations on Human Rights Day, 1966. On Human Rights Day, 1967, the names of eighteen additional endorsers were announced. These thirty leaders represent the large and small, highly developed and lesser developed nations, which compose more than one third of the world's population. President Lyndon B. Johnson's signature was among them.[21]

h. Scientists like Paul R. Ehrlich, a leader in ZPG (i.e., Zero Population Growth, Inc., 330 Second Street, Los Altos, California, 94022) movement, should not be taken lightly. Neither should two other organizations be considered lightly in promoting environmental control. They are: Friends of the Earth /League of Conservation Voters, 30 East 42nd Street, New York, N.Y. 10017 and Consumer Alliance, Inc., P.O. Box 1242, Los Altos, California 94022.

Ehrlich, a prodigious scientific writer, co-authored an article with John P. Holden, emphasizing the following interesting points for consideration:

(1) Subtle aspects of the relationship between population growth and environmental degradation operate to make man's predicament more perilous than superficial analyses indicate. Four aspects to be considered are SYNERGISMS, THRESHOLD EFFECTS, TRIGGER EFFECTS, and TIME DELAY EFFECTS.[22]

(2) A SYNERGISM is the interaction of two or more factors which yield a total effect greater than what would occur if the factors operated independently. An example would be the interaction of sulfur dioxide (from coal burning power plants) and asbestos particles (from automobile brake linings) in inducing lung cancer.[23]

(3) THRESHOLD EFFECTS would involve the response of environment to waste generated by human populations; thresholds can be exceeded with consequences ranging from nuisance odors to climatological disasters. An example is the plight of many of the rivers of the developed world, whose capacity to absorb sewage and industrial wastes has long since been exceeded.[24]

(4) A TRIGGER EFFECT, a possibility usually overlooked by those who feel that the population environment crisis has been exaggerated, occurs when an environmental balance is upset by a relatively small man-made input. An example would be the triggering of earthquakes by dams; the stress associated with water weight could release more energy than man put into building the dam. For example, an earthquake of magnitude 6.4, caused the killing of 200 people in India in 1967 when the dam was filling.[25]

(5) The preceding three factors, already considered, are compounded when the TIME DELAY factor is introduced for consideration. It refers to situations in which causes may precede their effects by many years. For example, particulate pollution, more than 50 percent of it dust from agricultural activities, is cooling the Earth and bringing on climatic changes. The consequences of this probably won't be felt for many years.[26]

(6) In short, Ehrlich and Holden suggest that the population growth today is driving us Americans to a degree of environmental degradation which is not fully apparent.[27]

2. Recent legislation:
   a. There is an analogy between family planning programs and abortion reform: both are advocated as humane welfare and health measures, and both may lead to a lower birth rate:[28]
      (1) in all, 12 states have reformed their abortion laws since 1967, some in small ways, some drastically.
      (2) three states repealed their restrictive abortion laws in 1970.
      (3) to date, eight states had their abortion laws declared unconstitutional by the courts and four more have cases pending.
      (4) THE CLOSET STEP TOWARD OUTRIGHT REPEAL OF ALL RESTRICTIONS ON ABORTION WAS TAKEN BY NEW YORK.
         (a) the old law had permitted abortions only to save the pregnant mother.
         (b) the new law leaves the decision to have an abortion entirely up to the mother and her doctor.

(c) the new law requires no in-state residency and sanctions all abortions within the first 24 weeks of pregnancy.

(5) in all states where abortion laws were reformed, the Women's Liberation movement played a significant role. It is also a leading force in the drive to secure a uniform national sanction for abortions on demand: 29

(a) a bill (S.3746) to accomplish the above was introduced by Senator Parkwood in April of 1970. It states that "Any physician is authorized to perform, in any state, by such means as he deems appropriate, an abortion on any female person who requests that action."

(b) a major setback, however, occurred in Maryland whose governor vetoed the reform bill.

(c) the Harris Poll reported that the U.S. public was 50-40 percent opposed to passage of state laws permitting abortion for almost any reason; however, the U.S. public agreed by 49-39 percent that abortions should be legalized until good, safe, birth control methods can be found.

(d) the Defense Department reiterated its 1966 policy that abortions may be obtained at base hospitals if two physicians agree it is necessary, regardless of the civilian laws in effect in the locale of the military hospitals.

(e) the strengthening family planning program and the easing of restrictions on abortions should go far toward testing the position of those who assert that the U.S. population growth can be brought to a halt by the elimination of unwanted births.

b. The <u>first United States family planning bill</u> (S.2108) was approved by Congress and signed into law by President Nixon on December 24, 1970: 30

(1) The Family Planning Services and Population Research Act of 1970 authorizes $382 million for family planning services, population research, manpower training, and information and education in the U.S.A. for the next three years.

(2) Congress has provided strong backing since 1967 for family planning within the AID <u>foreign</u> assistance and OEO anti-poverty programs.

(3) S.2108 (now, PL 91-572) is a historic first; the main objectives of the bill are:

(a) to make family planning fully available to the 5 million American women now lacking such services; funding $180 million.

(b) to support research for new and better family planning methods; funding, $154 million.

(c) to create an Office of Population Affairs in the Department of HEW with full authority for U.S. family planning programs.

(d) to provide funds for manpower training ($9 million) and informational materials ($3 million).

E. Conclusions:

1. It would seem the U.S.A. is pursuing a national goal and foreign policy of population control.

2. It would seem from the evidence presented in this report that population control is soundly based on empirical facts.

3. It would also seem that a conflict about this national goal could arise within the minds of many by the comments of Conrad Taeuber, Associate Director of the U.S. Census Bureau. They are:

a. Shifts in American population involve a movement from the center of the country to the seacoasts, resulting in the fact that half of all Americans live within 50 miles of the seacoasts, including the Great Lakes.[31]

b. The above fact provides a rationale for those who feel that the U.S. population problem is one of population distribution.[32]

c. If we are to deal with this problem, it is argued, we must find ways to decentralize our metropolitan areas, persuade people who are in rural areas to stay there and create new cities away from the congested metropolitan corridors.[33]

d. More effective contraceptives and abortion do not, in themselves, predict a decline in the birth rate. Future lower birth rates will depend upon the motivations of the people contributing the bulk of the children.[34]

e. Economic and social factors should be considered more threatening to the quality of American life than population growth. The population problem, then, is only a contributing factor to the many national problems which depend on the priorities that the U.S.A. attaches to the use of its natural resources.[35]

e. The recent public concern with environmental problems has often confused the element of population growth with the consequences of the way in which we live. Ansley Coals, a noted demographer, recently put the matter in its proper perspective when he wrote: "The way our economy is organized is an essential cause - if not the essential cause - of air and water pollution and of the ugly and sometimes destructive accumulation of trash."[36]

4. It would also seem that a conflict about this national goal could arise within the minds of many by President Nixon's recent statements (on April 3, 1971, to correspondents of the Washington Post Service) on abortion:

a. He considered that abortion was an unacceptable form of population control and that unrestricted abortion policies are incongruent with his personal belief that human life is sacred.

b. He directed that the abortion policy at military bases in the U.S.A. must conform to the state laws where these bases are located.

FOOTNOTES

1. Choice, Jan. 1971, pp. 1477 -1482.
2. William Petersen, Population (London: The McMillan Co., 1969), p. 155.
3. Ibid., p. 495.
4. W. Friedmann, Law in a Changing Society (Baltimore: Penguin Books, 1964), p.195.
5. Ibid., p. 196.
6. Ibid., p. 196.
7. Ibid., pp. 196-7.
8. Ibid., p. 197.
9. Ibid., p. 199.
10. Opinion expressed by Robert S. McNamara in an address ("On Population Control"), at the University of Notre Dame (Indiana), May 1, 1969.
11. Kenneth E.F. Watt, Ecology and Environment, a Quantitative Approach (New York: McGraw - Hill Book Co. 1968), pp. 8-17.
12. Ralph Thomlinson, Demographic Problems, Controversy over Population Control (California: Dickenson Publishing Co., Inc., 1967), p. 112.
13. Petersen, op. cit., p. 149.
14. Thomlinson, op. cit., p. 6.
15. Ibid., p. 6.
16. Raymond G. Manker, "Margaret Sanger: Victimized Saint," (California: The Society for Human Abortion, Inc., 1966), p.1.
17. Thomlinson, loc. cit., p.6.
18. "Population Education: The Pioneer Years," Population Bulletin, XXVI, 3 (February, 1971), 12.
19. The Population Council, 1952-1964, A Report: July 1965 (New York: United Nations), p. 7.
20. National Academy of Sciences, The Growth of World Population, 1963.
21. The Population Council, World Leaders Declaration, on Human Rights Day, 1966 and 1967 (New York: United Nations), p.3.
22. Paul R. Ehrlich and John P. Holden, "Hidden Effects of Overpopulation," Saturday Review, August 1, 1970, p. 52.
23. Ibid., p. 52.
24. Ibid., p. 52.
25. Ibid., p. 52.
26. Ibid., p. 52.
27. Ibid., p. 52.
28. "Abortion," Population Bulletin XXVI, 6 (December, 1970), 15.
29. Ibid., p. 15.
30. "Historic Family Planning Bill approved by Presisent Nixon, "Population Crisis, VII. 1 (January 1971), 1.
31. Conrad Taeuber, "Too Many Americans? A Population Expert's View," U.S. News and World Report, February 15, 1971, p. 62.
32. Ibid., p. 62.
33. Ibid., p. 62.
34. Ibid., p. 64.
35. Ibid., p. 64.
36. Ibid., p. 64.

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2. Choice (a U.S. Library journal), January, 1971.

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